



ELECTRICAL CURRENTS

Newsletter from the Office of the Chief Electrical Inspector

Ron Fuller, Chief Electrical Inspector

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● Cooperation Works In Combating The Underground Economy

Phil Zumbro, L&I electrical inspector, received a tip from an electrical contractor that a person might be doing electrical work without a valid electrical contractor's license. The homeowner told the legitimate electrical contractor he lost the job "because his price was too high."

On a Saturday, Inspector Zumbro drove by the jobsite and saw a van containing electrical material parked at the home. He left the area and shortly returned with his state vehicle and identification. He found a man doing electrical work who did not have an electrical contractor's license. Inspector Zumbro issued him an electrical citation for failing to be a licensed electrical contractor. The citation was not appealed, the citation has become a final judgment and the man was assessed a penalty of \$500.



Inspector Zumbro, Chief Fuller

Inspector Zumbro found the van belonged to the offender's normal employer, another electrical contractor. He was using a company van without his boss's permission. His use of his employer's van created liability concerns for his boss and damaged the trust between him and his boss.

The legitimate electrical contractor saw the value of his cooperation and wrote a very complimentary letter for Inspector Zumbro thanking him for his willingness to follow up and take the appropriate action in this case. The willingness of the honest electrical contractor to work with L&I in its efforts to combat the underground economy and level the competitive playing field for legitimate contractors is greatly valued. Electricians should think twice before competing illegally with electrical contractors who follow the law.

● NOTICE!! Public Hearing For Interim Rule Revisions September 27, 2005

These proposed revisions have a target effective date of November 18, 2005. Proposed revisions can be viewed at: <http://www.lni.wa.gov/TradesLicensing/Electrical/LawRulePol/RuleDev/>.

Copies of the proposed rules will also be available at the **public hearing on September 27, 2005, at 9:00 AM; Labor and Industries Building, Room S119/S118; 7273 Linderson Way, Tumwater**. If you are unable to attend, we must receive written, E-mailed, or faxed comments no later than 5:00 PM on September 27, 2005. This address is: Specialty Compliance Services Division, Attention Sally Elliott, PO Box 44400, Olympia, WA 98504-4400; E-mail: yous235@lni.wa.gov; Fax: (360) 902-5292.

● Temporary Services — When To Take Them Out Of Service

The rough use conditions of a construction site typically results in some damage to temporary service equipment. It is the owner's or contractor's responsibility to ensure that damaged equipment is repaired and in safe working condition before relocating it and requesting that it be inspected. Our inspectors have encountered equipment during inspections with broken breaker handles, over-fused conductors or receptacles, missing knock-outs, missing dead fronts, missing covers, cracked weather-heads, obvious water damage, and even with insect or bird nests inside. You may be subject to additional fees if you submit damaged equipment as "ready for inspection." If damaged equipment cannot be repaired to its original safe operating condition, it should be taken out of service and scrapped.

● Not All Inspectors Are Available For Phone Calls In The Morning

With the recent workload increase many inspectors will not be available to answer phone calls in the morning. In an effort to get the most efficiency from our limited inspection resources, some of our inspectors go directly to the field and are not in the office at all. You should leave your questions on the inspector's voicemail and a lead inspector or supervisor will call you back; this way an arrangement can still be made to provide access for inspections. The department's inspectors will continue to make every possible effort to accommodate the electrical contractor's schedule.

● Master Electrician Grandfathering Period Over—No Exceptions

July 1, 2005 was the last opportunity for qualifying existing certified electricians to obtain master electrician status without examination. Since this date, the department has received letters and phone calls from individuals wanting to convert their current certifications to master status. The department can not accept any applications or entertain any requests to re-open the grandfathering period. To take the master electrician or master specialty electrician examination an application must be filled out and submitted to the department for approval. The application is available at:

<http://www.lni.wa.gov/TradesLicensing/Electrical/FormPub/Forms/>

● Proper Identification And Use of Tamper Resistant Receptacles

Tamper Resistant Receptacles are identified by the words "Tamper Resistant" or the letters "TR" where they will be visible after installation with the cover plate removed. Tamper-resistant receptacles may be of the general grade, hospital grade, or isolated ground type. The receptacle has an internal mechanism that prevents the insertion of inappropriate objects.

The 2005 NEC 517.18(C) states: **"Pediatric Locations.** *Receptacles located within the rooms, bathrooms, playrooms, activity rooms, and patient care areas of pediatric wards shall be listed tamper resistant or shall employ a listed tamper resistant cover.*" This article was revised from the 2002 Code to cover **all** receptacles installed in the patient care areas of pediatric locations. The use of locking covers or plastic safety inserts over receptacles do not meet this requirement.

WAC 296-46B-010(18) states: *"Listed tamper-resistant receptacles or listed tamper-resistant receptacle cover plates are required in all licensed day care centers, all licensed children group care facilities and psychiatric patient care facilities where accessible to children five years of age and under. Listed tamper-resistant receptacles are required in psychiatric patient care facilities where accessible to psychiatric patients over five years of age."* Children over 5 years old in psychiatric patient care facilities can be destructive. Only listed tamper resistant receptacles are acceptable in these areas, not cover plates.

● Photovoltaic Installations

Recent advances in technology are resulting in the increased interest in installing photovoltaic (PV) systems. New or improved products provide more opportunities for integrating PV systems into residential and commercial buildings. These systems typically must be installed by licensed 01 or 02 electrical contractors employing certified electricians. We have recently received inquiries about whether 06-limited energy electricians are able to install, service, or maintain solar photovoltaic systems.

Limited energy electricians can only service or install the low voltage portion of photovoltaic systems that are rated at or below 30 volts and 1,000 volt-amperes. This specialty is limited to installations of "low voltage" circuits and equipment. WAC 296 46B 020(42) defines "low voltage" as Class 1 power limited circuits at 30 volts maximum, and Class 2 and Class 3 circuits per NEC 725. NEC 725-21(A) restricts Class 1 Power-Limited Circuits to a maximum of 1,000 volt-amperes.

When customers have **interactive systems** (NEC 690.2), utilities are necessarily concerned about the safety of line workers trying to restore power to the utility grid during outages. When utility power is lost, the PV system may be producing power that can be fed back into the utility-distribution system. Listing of PV systems and equipment by an electrical testing laboratory accredited in Washington ensures the requirements of NEC 690.61 (i.e. de-energize inverter output to the utility electrical production and distribution network on loss of utility voltage) are met. A properly listed solar PV system will allow operation as a stand-alone system to supply loads that have been disconnected from the utility distribution. Unlisted PV system equipment is not acceptable in any solar photovoltaic installation.

● Electrical Question of the Month

This Month's Question: The minimum size conductor required to connect metal parts of a swimming pool to a common bonding grid shall not be smaller than **A) 6 AWG, solid copper, B) 6 AWG, stranded copper, C) 8 AWG, solid copper, D) 8 AWG, stranded copper.**

Last Month's Question: Type THW copper conductors for a 3-wire, single phase dwelling service rated at 100 amperes shall not be less than: **A) 6 AWG, B) 4 AWG, C) 3 AWG, D) 2 AWG.**

The answer is **B)** [NEC Table 310.15(B)(6)].